Flint Water Infrastructure Summit - Call for Presentation Abstracts

#1 COMPLETE

Collector: Web Link 1 (Web Link)
Started: Thursday, November 10, 2016 12:30:45 PM
Last Modified: Thursday, November 10, 2016 12:42:10 PM
Time Spent: 00:11:25
IP Address: 107.0.130.114

PAGE 1

Q1: **What Track(s) does this Abstract relate to?**	PUBLIC HEALTH INTERFACE· Drinking water distribution system optimization for water quality· Addressing consumer desire for drinking water quality beyond regulatory requirements including point-of-entry and point-of-use water treatment devices
Q2: **Are you submitting this abstract as**	An Oral Presentation

PAGE 2: Presentation Information

Q3: **Proposed Presentation/Poster/Panel Title - Please submit the title as you would like it to appear in the program (maximum 12 words)**	Improving Water Quality by Identifying and Eliminating Hazardous Dead-Ends

Q4: **Presentation/Poster Abstract or Panel Overview:**

Flint's water crisis has become a national symbol for the problems facing aging water systems. The reality is that cities across the entire country are facing the same infrastructure problems. There has been a lot of discussion around the necessity of replacing lead service connections and other sources of contamination in our drinking water systems. Even with new lead-free services, a potential problem still remains and that is the existence of dead-ends in many water distribution systems. Uncirculated potable water in distribution dead ends can pose a serious health problem for consumers. As water ages, disinfectant residuals decline and disinfectant by-products (DBPs) increase, creating health risks for consumers and regulatory headaches for distribution and water quality managers.
Identifying hazardous dead-ends and properly allocating resources are key to addressing potential health problems. Most municipal systems are looped to create redundant feeds and maintain free flow of water to residents and businesses. In many municipal systems however, "dead-ends" are created by inadvertently closed valves, valves broken in a closed position and covered over valves that are set in an incorrect position.
Dead ends exist because these assets are buried – and therefore not visible for position verification. Because the system is looped, the impact of reduced flow and pressure may not be noticed or readily felt, but the issue of contaminated and low-quality water trapped by these dead-ends creates a lingering issue.
Basing decisions on quantitative data is key to effective resource allocation and decision making. This presentation will explore the steps necessary to insure that the buried and hidden infrastructure meets the needs of our municipal water systems and delivers the quality water that is expected.

Q5: **Oral Presentations should be 30 minutes (including 5 min. Question/Answer period). If your proposed presentation falls outside these parameters, please explain:**

n/a

PAGE 3

Q6: **Will you allow the DEQ to post a .pdf version of your presentation on the post conference Web site?**	Yes

Q7: **Who is the target audience for this presentation/poster/panel (e.g., municipal employees; local, state, and federal officials; community leaders; business/industry representatives; engineering consultants; contractors)? (up to 100 words)**

Municipal employees, local and state officials, community leaders, engineering consultants, water consumers.

Q8: **What are the learning objectives (actionable information) of the presentation?**

How to identify hazardous dead-ends and properly allocate resources to address potential health problems.
Identifying the necessary steps to insure that buried infrastructure meets the needs of the people who depend on it.
How to use data to effectively allocate resources and make decisions.

Q9: **Will this or a similar paper/session be published or presented before March 7, 2017?**	No

PAGE 4: Panel Information

Q10: Please indicate Panel Participants	*Respondent skipped this question*
Q11: Panel Abstract 1	*Respondent skipped this question*
Q12: Panel Abstract 2	*Respondent skipped this question*
Q13: Panel Abstract 3	*Respondent skipped this question*
Q14: Panel Abstract 4	*Respondent skipped this question*

PAGE 5: Speaker/Presenter Information

Q15: **Name of Presenter**	Wayne Pratt
Q16: **Title**	Vice President of Business Development
Q17: **Organization**	Wachs Water Services
Q18: **E-mail:**	wpratt@wachsws.com
Q19: **Phone (Area Code/Number):**	847-946-5907
Q20: **Address:**	801 Asbury Drive
Q21: **City:**	Buffalo Grove
Q22: **State:**	IL
Q23: **Zip Code:**	60090

Q24: **Biographical Sketch - Please provide a brief biographical sketch (bio) 150 words or less that outlines the presenter's expertise relative to the presentation. Bios will be provided to conference attendees, but submission of a bio does not constitute automatic acceptance of a presentation.**

Wayne Pratt is the Vice President of Business Development for Wachs Water Services. He is a skilled program manager with many years of practical experience managing large staffs, complex multi-task, multi-deliverable, multi-year programs each worth in excess of $10MM. He holds an active Contractor's License in Arizona, California, Florida, Georgia, Tennessee and Virginia to facilitate Wachs Water Services execution of larger scale repair programs and minor repairs where State or political subdivisions require such licensure.

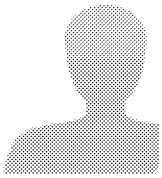
Mr. Pratt has an MBA (suma cum laude) Devry University Oak Brook, IL BA Business Management, Northwood University, Midland, MI Divers Training Academy, Linkport, FL, Commercial Deep Sea Water Repair.

Mr. Pratt is a known commodity in the business community successfully growing professional services companies in several sectors from energy to water resources; was featured on Alexander Haig's World Business Review (www.wbrtv.com – show #1041).
Mr. Pratt is an adjunct professor at Concordia University, Mequon WI and Columbia College, Gurnee, IL, where he teaches Project Management and Strategic Management and Integration.

Q25: Please provide co-presenter information, if applicable.	*Respondent skipped this question*
Q26: Co-presenter Biographic Sketch, if applicable	*Respondent skipped this question*
Q27: **Comments:**	Wachs Water Services is willing and able to participate in this summit in any way that might help make a difference in improving the quality of drinking water in Flint and across our nation.

Flint Water Infrastructure Summit - Call for Presentation Abstracts

#2



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Last Modified: Thursday, November 10, 2016 3:35:20 PM
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IP Address: 208.38.248.76

PAGE 1

Q1: **What Track(s) does this Abstract relate to?**	SYSTEM DESIGN, OPERATIONS, AND MANAGEMENT· Right-sizing water treatment and distribution system infrastructure, particularly cities that have experienced a decline in population, and water demands including design and use of flexible infrastructure· Coordination of drinking water infrastructure projects with other infrastructure projects and entities· Drinking water distribution system leak detection and remediation· Water main rehabilitation, replacement and repair technologies· Asset management, financing and rate structures· Water affordability and equity pricing· Water conservation programs· Reliable methods to identify service line and piping materials , TECHNOLOGY AND INNOVATION· Projects and technologies that drive energy and operational efficiencies in the movement and management of water· Lead service line replacement programs and technologies· Innovative infrastructure technologies that protect the public health and environment· Reliable methods to identify service line and piping materials , PUBLIC HEALTH INTERFACE· Drinking water distribution system optimization for water quality· Addressing consumer desire for drinking water quality beyond regulatory requirements including point-of-entry and point-of-use water treatment devices
Q2: **Are you submitting this abstract as**	A Poster Presentation (Posters must not exceed 48 x 48 inches)

PAGE 2: Presentation Information

Q3: **Proposed Presentation/Poster/Panel Title - Please submit the title as you would like it to appear in the program (maximum 12 words)**	Chemical Contamination of Drinking Water Infrastructure and Decontamination Methods

Q4: **Presentation/Poster Abstract or Panel Overview:**

From 2014-2016, a series of drinking water chemical contamination events in North America caused more than 1.5 million people of access to the safe drinking water. These incidents resulted in chemically contaminated water entering drinking water distribution systems and building plumbing. The contamination incidents and subsequent responses by government officials, water utilities, and building owners revealed the need for a better understanding of chemical fate in piping systems. Studies conducted by the research team have involved (1) the examination of plastic and metal pipe susceptibility to oil contamination and their decontamination by flushing and surfactants, (2) development of protocols for residential water heater decontamination, (3) and the development of a new plastic drinking water pipe decontamination technology. Results will be presented and show much work is still needed to understand chemical fate in piping systems, specifically building plumbing.

Q5: Oral Presentations should be 30 minutes (including 5 min. Question/Answer period). If your proposed presentation falls outside these parameters, please explain:	*Respondent skipped this question*

PAGE 3

Q6: **Will you allow the DEQ to post a .pdf version of your presentation on the post conference Web site?**	No

Q7: **Who is the target audience for this presentation/poster/panel (e.g., municipal employees; local, state, and federal officials; community leaders; business/industry representatives; engineering consultants; contractors)? (up to 100 words)**

municipal employees, government officials; community leaders; engineering consultants; contractors

Q8: **What are the learning objectives (actionable information) of the presentation?**

Recognize the array of technologies for decontaminating chemically contaminated water infrastructure
Apply knowledge to design water infrastructure decontamination protocols

Q9: **Will this or a similar paper/session be published or presented before March 7, 2017?**	No

PAGE 4: Panel Information

Q10: Please indicate Panel Participants	*Respondent skipped this question*
Q11: Panel Abstract 1	*Respondent skipped this question*
Q12: Panel Abstract 2	*Respondent skipped this question*
Q13: Panel Abstract 3	*Respondent skipped this question*
Q14: Panel Abstract 4	*Respondent skipped this question*

PAGE 5: Speaker/Presenter Information

Q15: **Name of Presenter**	Xiangning Huang
Q16: **Title**	PhD student
Q17: **Organization**	Purdue University, Lyles School of Civil Engineering
Q18: **E-mail:**	huang250@purdue.edu
Q19: **Phone (Area Code/Number):**	540-230-6069
Q20: **Address:**	550 Stadium Mall Drive
Q21: **City:**	West Lafayette
Q22: **State:**	IN
Q23: **Zip Code:**	47907

Q24: **Biographical Sketch - Please provide a brief biographical sketch (bio) 150 words or less that outlines the presenter's expertise relative to the presentation. Bios will be provided to conference attendees, but submission of a bio does not constitute automatic acceptance of a presentation.**

Xiangning Huang is a Purdue University doctoral student in Civil Engineering. She earned her B.S. degree in Environmental Engineering from Tianjin Polytechnic University and M.S. degree in Civil Engineering from Purdue University. Her current work focusses on technologies for water infrastructure decontamination.

Q25: Please provide co-presenter information, if applicable.	*Respondent skipped this question*
Q26: Co-presenter Biographic Sketch, if applicable	*Respondent skipped this question*
Q27: **Comments:**	Here is the full author list: Xiangning Huang1, Karen Casteloes1, Jake Hawes1,2, Emily Conkling1,2, Andrew J. Whelton1,2 1. Lyles School of Civil Engineering, Purdue University 2. Division of Environmental and Ecological Engineering, Purdue University

Flint Water Infrastructure Summit - Call for Presentation Abstracts

#3 COMPLETE

Collector: Web Link 1 (Web Link)
Started: Thursday, November 10, 2016 8:54:59 PM
Last Modified: Thursday, November 10, 2016 9:04:35 PM
Time Spent: 00:09:36
IP Address: 172.77.210.181

PAGE 1

Q1: **What Track(s) does this Abstract relate to?**	SYSTEM DESIGN, OPERATIONS, AND MANAGEMENT· Right-sizing water treatment and distribution system infrastructure, particularly cities that have experienced a decline in population, and water demands including design and use of flexible infrastructure· Coordination of drinking water infrastructure projects with other infrastructure projects and entities· Drinking water distribution system leak detection and remediation· Water main rehabilitation, replacement and repair technologies· Asset management, financing and rate structures· Water affordability and equity pricing· Water conservation programs· Reliable methods to identify service line and piping materials , TECHNOLOGY AND INNOVATION· Projects and technologies that drive energy and operational efficiencies in the movement and management of water· Lead service line replacement programs and technologies· Innovative infrastructure technologies that protect the public health and environment· Reliable methods to identify service line and piping materials , PUBLIC HEALTH INTERFACE· Drinking water distribution system optimization for water quality· Addressing consumer desire for drinking water quality beyond regulatory requirements including point-of-entry and point-of-use water treatment devices
Q2: **Are you submitting this abstract as**	A Poster Presentation (Posters must not exceed 48 x 48 inches)

PAGE 2: Presentation Information

Q3: **Proposed Presentation/Poster/Panel Title - Please submit the title as you would like it to appear in the program (maximum 12 words)**	In-Situ Pipe Repair Technologies: Emerging Water Quality and Air Quality Challenges

Q4: **Presentation/Poster Abstract or Panel Overview:**

Water pipe repairs are increasingly being completed with polymer coatings and cured in place pipe (CIPP) liners. These technologies enable pipe owners to avoid costly pipe replacement activities (i.e., road closures, building repairs) by installing a barrier between the corroded pipe and water that it conveys. Coatings are being applied to line lead service lines and other problematic corroded metal drinking water pipes. Today, 50% of all water pipes are repaired by CIPP technology, a process where a new pipe within a pipe is installed. In 2016, the US National Science Foundation funded a rapid response study to investigate chemical air emissions caused by the CIPP installation process. The study was funded in the wake of a report that styrene was emitted into a public space at a level far exceeding workplace and general public exposure limits. In the NSF funded study, chemical air emissions were monitored for five CIPP installations. Results showed that chemical air emissions can be high, transient, and contain more than simply styrene. Additional work has revealed materials contain contaminants that can leach out of the installed products. Evidence-based best practices for using in-situ pipe repair technologies will be discussed that could prevent health impacts on the nearby population, odor complaints, as well as degradation of water quality.

Q5: Oral Presentations should be 30 minutes (including 5 min. Question/Answer period). If your proposed presentation falls outside these parameters, please explain:	*Respondent skipped this question*

PAGE 3

Q6: **Will you allow the DEQ to post a .pdf version of your presentation on the post conference Web site?**	No

Q7: **Who is the target audience for this presentation/poster/panel (e.g., municipal employees; local, state, and federal officials; community leaders; business/industry representatives; engineering consultants; contractors)? (up to 100 words)**

municipal employees; government officials; community leaders; industry representatives; engineering consultants; contractors

Q8: **What are the learning objectives (actionable information) of the presentation?**

Recognize the types of in-situ polymer based pipe repair technologies being used for water infrastructure
Discuss which activities result in the highest chemical emissions into the air during CIPP installation per present day knowledge
Identify chemical exposure pathways associated with in-situ repair of water pipes

Q9: **Will this or a similar paper/session be published or presented before March 7, 2017?**	No

PAGE 4: Panel Information

Q10: Please indicate Panel Participants	*Respondent skipped this question*
Q11: Panel Abstract 1	*Respondent skipped this question*
Q12: Panel Abstract 2	*Respondent skipped this question*
Q13: Panel Abstract 3	*Respondent skipped this question*

Q14: Panel Abstract 4	*Respondent skipped this question*

PAGE 5: Speaker/Presenter Information

Q15: **Name of Presenter**	Mabi Teimouri
Q16: **Title**	PhD student
Q17: **Organization**	Purdue University, Lyles School of Civil Engineering
Q18: **E-mail:**	steimouri@purdue.edu
Q19: **Phone (Area Code/Number):**	540-230-6069
Q20: **Address:**	550 Stadium Mall Drive
Q21: **City:**	West Lafayette
Q22: **State:**	IN
Q23: **Zip Code:**	47907

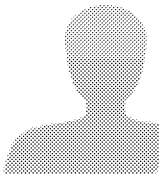
Q24: **Biographical Sketch - Please provide a brief biographical sketch (bio) 150 words or less that outlines the presenter's expertise relative to the presentation. Bios will be provided to conference attendees, but submission of a bio does not constitute automatic acceptance of a presentation.**

Mabi Teimouri is a PhD student in the Purdue University's School of Civil Engineering. She is conducting research on cured-in-place-pipe (CIPP) chemical emissions into water and air. She graduated from Tarbiat Modares University with an M.S. in Chemical Engineering, and Amirkabir University of Technology with a B.S. in Chemical Engineering.

Q25: Please provide co-presenter information, if applicable.	*Respondent skipped this question*
Q26: Co-presenter Biographic Sketch, if applicable	*Respondent skipped this question*
Q27: **Comments:**	Here is the full author list: Mabi Teimouri1, Kyungyeon Ra2, Emily Conkling2, Brandon Boor1, John Howarter2,3, Andrew Whelton1,2 1. Lyles School of Civil Engineering, Purdue University 2. Division of Environmental and Ecological Engineering, Purdue University 3. Materials Engineering, Purdue University

Flint Water Infrastructure Summit - Call for Presentation Abstracts

#4



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Time Spent: 00:06:09
IP Address: 204.94.174.5

PAGE 1

Q1: **What Track(s) does this Abstract relate to?**	PUBLIC HEALTH INTERFACE· Drinking water distribution system optimization for water quality· Addressing consumer desire for drinking water quality beyond regulatory requirements including point-of-entry and point-of-use water treatment devices
Q2: **Are you submitting this abstract as**	An Oral Presentation

PAGE 2: Presentation Information

Q3: **Proposed Presentation/Poster/Panel Title - Please submit the title as you would like it to appear in the program (maximum 12 words)**	Helping Consumers and Public Health Officials Choose the Correct POU or POE Filter

Q4: **Presentation/Poster Abstract or Panel Overview:**

NSF International developed consensus national standards for the testing and evaluation of filter performance for a variety of potential contaminants. Hundreds of different types of POU/POE filters have been tested and certified to these standards, however, choosing the right filter for a specific water requires knowledge of the consumer's water chemistry, the potential presence of contaminants to be removed, and the filters' capacities. With hundreds of filter options available, selecting or recommending an appropriate water filtration system can be challenging. This presentation will cover the various standards for POU/POE devices, including general requirements for all filter products and their component materials, product literature evaluation, as well as verification of manufacturer claims. A brief description of how products are evaluated and tested in accordance with the ANSI NSF consensus national standards will be reviewed. How this testing translates to the NSF Listing and how NSF listings can guide consumers to the correct products. Municipalities and public health officials will learn how to appropriately guide consumers to filters that perform as advertised. The importance of proper maintenance of these systems to ensure continued protection will be stressed because failure to properly maintain the filtration system, either by failing to replace the filter as directed by the manufacture or the use of non-certified aftermarket replacement parts, and in some cases, counterfeit filters, can lead to additional health concerns.

Q5: Oral Presentations should be 30 minutes (including 5 min. Question/Answer period). If your proposed presentation falls outside these parameters, please explain:	*Respondent skipped this question*

PAGE 3

Q6: **Will you allow the DEQ to post a .pdf version of your presentation on the post conference Web site?**	Yes

Q7: **Who is the target audience for this presentation/poster/panel (e.g., municipal employees; local, state, and federal officials; community leaders; business/industry representatives; engineering consultants; contractors)? (up to 100 words)**

municipal employees; local, state, and federal officials; community leaders; business/industry representatives; engineering consultants; contractors

Q8: **What are the learning objectives (actionable information) of the presentation?**

Attendees will learn about the standards for the evaluation of water filters, the testing and certification process, the limitations, and the importance of regular maintenance.

Q9: **Will this or a similar paper/session be published or presented before March 7, 2017?**	No

PAGE 4: Panel Information

Q10: Please indicate Panel Participants	*Respondent skipped this question*
Q11: Panel Abstract 1	*Respondent skipped this question*
Q12: Panel Abstract 2	*Respondent skipped this question*
Q13: Panel Abstract 3	*Respondent skipped this question*
Q14: Panel Abstract 4	*Respondent skipped this question*

PAGE 5: Speaker/Presenter information

Q15: **Name of Presenter**	Brandon Rudolph
Q16: **Title**	Senior Account Manager, Filtration
Q17: **Organization**	NSF International
Q18: **E-mail:**	brudolph@nsf.org
Q19: **Phone (Area Code/Number):**	(734) 827 6826
Q20: **Address:**	789 N Dixboro Road
Q21: **City:**	Ann Arbor
Q22: **State:**	MI
Q23: **Zip Code:**	48105

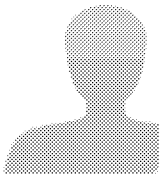
Q24: **Biographical Sketch - Please provide a brief biographical sketch (bio) 150 words or less that outlines the presenter's expertise relative to the presentation. Bios will be provided to conference attendees, but submission of a bio does not constitute automatic acceptance of a presentation.**

Brandon Rudolph is a long time employee at NSF specializing in drinking water treatment unit inspection, testing and certification.

Q25: Please provide co-presenter information, if applicable.	*Respondent skipped this question*
Q26: Co-presenter Biographic Sketch, if applicable	*Respondent skipped this question*
Q27: Comments:	*Respondent skipped this question*

Flint Water Infrastructure Summit - Call for Presentation Abstracts

#5



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Last Modified: Friday, November 11, 2016 4:55:14 PM
Time Spent: 00:06:27
IP Address: 204.94.174.5

PAGE 1

Q1: **What Track(s) does this Abstract relate to?**	PUBLIC HEALTH INTERFACE· Drinking water distribution system optimization for water quality· Addressing consumer desire for drinking water quality beyond regulatory requirements including point-of-entry and point-of-use water treatment devices
Q2: **Are you submitting this abstract as**	An Oral Presentation

PAGE 2: Presentation Information

Q3: **Proposed Presentation/Poster/Panel Title - Please submit the title as you would like it to appear in the program (maximum 12 words)**	Prevention of Disease and Injury Associated with Building Water Systems

Q4: **Presentation/Poster Abstract or Panel Overview:**

While a municipal water distribution system is the major component in delivering safe drinking water to our citizens, in regards to water hazards related to public health, a building's water system is our last line of defense. Proper water management for building owners starts with developing a Water Safety Plan (WSP). A WSP is a comprehensive evaluation of a building water system and includes a Risk Assessment for Legionella as well as identifying potential chemical, microbial, and physical hazards including ingestion, inhalation, skin contact measures and action plans to minimize evaluated hazards. It is important for the building owner to establish a Water Management Team (WMT). The WMT is responsible for implementing a Water Management Plan (WMP). Team members are tasked with minimizing all water related risks within the building by the use of critical control points, critical limits, monitoring, corrective actions, documentation and recordkeeping as well as verification and validation. This industry best practice approach gives occupants of a building the highest level of protection against all potential physical, chemical, and microbial waterborne hazards while minimizing future, unforeseen damages to building owners through litigation.

Q5: Oral Presentations should be 30 minutes (including 5 min. Question/Answer period). If your proposed presentation falls outside these parameters, please explain:	*Respondent skipped this question*

PAGE 3

Q6: **Will you allow the DEQ to post a .pdf version of your presentation on the post conference Web site?**	Yes

Q7: **Who is the target audience for this presentation/poster/panel (e.g., municipal employees; local, state, and federal officials; community leaders; business/industry representatives; engineering consultants; contractors)? (up to 100 words)**

Building owners, plumbing inspectors, health department personnel, waterworks personnel, consulting engineers

Q8: **What are the learning objectives (actionable information) of the presentation?**

The main purpose of this presentation is to make the audience aware of potential hazards associated with premise plumbing, specifically, physical, chemical and microbiological hazards, that can impact public health, and the systems available to mitigate these hazards.

Q9: **Will this or a similar paper/session be published or presented before March 7, 2017?**	No

PAGE 4: Panel Information

Q10: Please indicate Panel Participants	*Respondent skipped this question*
Q11: Panel Abstract 1	*Respondent skipped this question*
Q12: Panel Abstract 2	*Respondent skipped this question*
Q13: Panel Abstract 3	*Respondent skipped this question*
Q14: Panel Abstract 4	*Respondent skipped this question*

PAGE 5: Speaker/Presenter Information

Q15: **Name of Presenter**	Dann Holmes
Q16: **Title**	Program Manager, Building Water Health
Q17: **Organization**	NSF International
Q18: **E-mail:**	dholmes@nsf.org
Q19: **Phone (Area Code/Number):**	(734) 769-5159
Q20: **Address:**	789 N. Dixboro Road
Q21: **City:**	Ann Arbor
Q22: **State:**	MI
Q23: **Zip Code:**	48105

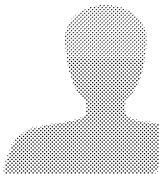
Q24: **Biographical Sketch - Please provide a brief biographical sketch (bio) 150 words or less that outlines the presenter's expertise relative to the presentation. Bios will be provided to conference attendees, but submission of a bio does not constitute automatic acceptance of a presentation.**

Dann Holmes is a plumbing veteran who has many years of experience working in regulated plumbing environments.

Q25: Please provide co-presenter information, if applicable.	*Respondent skipped this question*
Q26: Co-presenter Biographic Sketch, if applicable	*Respondent skipped this question*
Q27: Comments:	*Respondent skipped this question*

Flint Water Infrastructure Summit - Call for Presentation Abstracts

#6



COMPLETE

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Started: Friday, November 11, 2016 5:15:41 PM
Last Modified: Friday, November 11, 2016 5:25:33 PM
Time Spent: 00:09:52
IP Address: 128.210.106.57

PAGE 1

Q1: **What Track(s) does this Abstract relate to?**	SYSTEM DESIGN, OPERATIONS, AND MANAGEMENT· Right-sizing water treatment and distribution system infrastructure, particularly cities that have experienced a decline in population, and water demands including design and use of flexible infrastructure· Coordination of drinking water infrastructure projects with other infrastructure projects and entities· Drinking water distribution system leak detection and remediation· Water main rehabilitation, replacement and repair technologies· Asset management, financing and rate structures· Water affordability and equity pricing· Water conservation programs· Reliable methods to identify service line and piping materials , TECHNOLOGY AND INNOVATION· Projects and technologies that drive energy and operational efficiencies in the movement and management of water· Lead service line replacement programs and technologies· Innovative infrastructure technologies that protect the public health and environment· Reliable methods to identify service line and piping materials , PUBLIC HEALTH INTERFACE· Drinking water distribution system optimization for water quality· Addressing consumer desire for drinking water quality beyond regulatory requirements including point-of-entry and point-of-use water treatment devices
Q2: **Are you submitting this abstract as**	An Oral Presentation

PAGE 2: Presentation Information

Q3: **Proposed Presentation/Poster/Panel Title - Please submit the title as you would like it to appear in the program (maximum 12 words)**	Plastics in Water Infrastructure Repair and New Construction, Thinking Forward

Q4: **Presentation/Poster Abstract or Panel Overview:**

Historically, water infrastructure in the US has been comprised of metal and cement based conveyance and storage materials, but the use of plastics such as coatings, liners, and pipes has been increasing. Plastics are being selected for water distribution systems and building plumbing because of their low cost and ease of installation. Incidents have occurred however where fittings and pipes used for plastic pipe systems have prematurely failed, fixture gaskets have been prematurely aged, and chemical leaching has resulted in off-odors. This presentation will provide the audience an overview of plastics used in water infrastructure and some of the material performance issues observed by the author. Results from a three-year study funded by the US National Science Foundation on plastic plumbing systems will be discussed. Results from other plastic water infrastructure focused bench and field studies will also be described. Best practice recommendations will be reviewed that can be considered for material selection and use purposes. Plastic materials to be discussed include crosslinked polyethylene (PEX), high-density polyethylene (HDPE), polypropylene (PP), polyvinylchloride (PVC), chlorinated polyvinylchloride (CPVC), cured in place pipe (CIPP), epoxy, polyurea, polyurethane, among others.

Q5: **Oral Presentations should be 30 minutes (including 5 min. Question/Answer period). If your proposed presentation falls outside these parameters, please explain:**

The presentation length of 25 minutes is fine. Though, additional information and depth could be provided if the presentation length was longer (i.e., 45 min). Most of the utility/regulatory/engineering consultant communities have no formal material science training so they could benefit from a discussion of plastics concepts and applications.

PAGE 3

Q6: **Will you allow the DEQ to post a .pdf version of your presentation on the post conference Web site?** Yes

Q7: **Who is the target audience for this presentation/poster/panel (e.g., municipal employees; local, state, and federal officials; community leaders; business/industry representatives; engineering consultants; contractors)? (up to 100 words)**

municipal employees; local, state, and federal officials; community leaders; business/industry representatives; engineering consultants; contractors

Q8: **What are the learning objectives (actionable information) of the presentation?**

Recognize the range of plastics being used in water infrastructure repair and new construction
List past performance issues associated with several plastics technologies
Evaluate the pros and cons of plastics technologies for water infrastructure application

Q9: **Will this or a similar paper/session be published or presented before March 7, 2017?** No

PAGE 4: Panel Information

Q10: Please indicate Panel Participants *Respondent skipped this question*

Q11: Panel Abstract 1 *Respondent skipped this question*

Q12: Panel Abstract 2 *Respondent skipped this question*

Q13: Panel Abstract 3	*Respondent skipped this question*
Q14: Panel Abstract 4	*Respondent skipped this question*

PAGE 5: Speaker/Presenter Information

Q15: **Name of Presenter**	Andrew J. Whelton
Q16: **Title**	Assistant Professor
Q17: **Organization**	Purdue University
Q18: **E-mail:**	awhelton@purdue.edu
Q19: **Phone (Area Code/Number):**	540-230-6069
Q20: **Address:**	550 Stadium Mall Drive
Q21: **City:**	West Lafayette
Q22: **State:**	IN
Q23: **Zip Code:**	47906

Q24: **Biographical Sketch - Please provide a brief biographical sketch (bio) 150 words or less that outlines the presenter's expertise relative to the presentation. Bios will be provided to conference attendees, but submission of a bio does not constitute automatic acceptance of a presentation.**

Andrew J. Whelton, Ph.D., is an Environmental Engineer and Purdue University faculty member. He holds a joint appointment in the Lyles School of Engineering and Division of Environmental and Ecological Engineering. Dr. Whelton's research program focusses on infrastructure, the environment, and public health with specific emphasis on emerging health and environmental risks associated with technology and disasters. His contributions have spanned the drinking water, nanotechnology, nuclear power, aquatic toxicology, and indoor air disciplines. Prior to joining Purdue University, he served on the University of South Alabama faculty. Whelton also previously worked for the U.S. Army, NIST, Virginia Tech and several engineering consulting firms. Andrew earned a B.S. Civil Engineering, M.S. Environmental Engineering, and Ph.D. Civil Engineering from Virginia Tech.

Q25: Please provide co-presenter information, if applicable.	*Respondent skipped this question*
Q26: Co-presenter Biographic Sketch, if applicable	*Respondent skipped this question*
Q27: **Comments:**	This presentation will be designed to elevate the baseline level of understanding about plastics in water infrastructure.